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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,584	08/25/2003	Lyn Lequam Ashton	TUC920030066US1	4087

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EXAMINER	
GOLDEN, JAMES R	

ART UNIT	PAPER NUMBER
2187	

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/648,584	ASHTON ET AL.	
	Examiner	Art Unit	
	James Golden	2187	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,9-18 and 20-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7, 9-18 and 20-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This action is in response to the communication received June 22, 2006. The instant application 10/648584 has a total of 20 claims pending; claims 8 and 19 are canceled, and claims 21 and 22 are new. There are 4 independent claims and 16 dependent claims.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Basham et al. (US 5,757,571) in view of Hoffberg et al. (US 2002/0151992).

3. **With respect to claim 1**, Basham et al. disclose an apparatus for utilizing tape storage media segmentation to improve data access performance, the apparatus comprising:

- a tape storage medium (tape medium 206 of Fig. 2) configured to store data (column 5, lines 48-51; column 6, lines 1-11);
- a segmentation module (controller 204 of Fig. 2) configured to access a first segment (408a of Fig. 4; column 9, lines 1-3) and a second segment (data space following 409 of Fig. 4; column 9, lines 1-3) on the tape storage medium (the

controller accesses the data on tape, column 5, lines 55-56; the data on the tape is stored in segments, column 9, lines 1-7); and

- a selection module (host 202 of Fig. 2; column 5, lines 51-54) configured to allow a user to select a user-defined capacity ("partition", column 11, lines 18-20, lines 34-36) of the tape storage medium that is less than a usable capacity of the tape storage medium (column 11, lines 34-36).

Basham et al. do not disclose the limitation further comprising an identification module that is configured to identify a tape storage medium as full when a substantial portion of the user-defined capacity of the tape storage medium has been used to store the data.

However, Hoffberg et al. disclose the limitation further comprising an identification module that is configured to identify a tape storage medium as full when a substantial portion of the user-defined capacity of the tape storage medium has been used to store the data [1133, lines 8-11, where the library function acts as the identification module].

Basham et al. and Hoffberg et al. are analogous art because they are from the same field of endeavor, namely magnetic tape data storage.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to combine the partially full tape identification of Hoffberg et al. with the tape data storage apparatus of Basham et al. The motivation for doing so would have been because identification allows users "to optimally fill a tape without splitting a program" [1133, lines 3-4].

Therefore, it would have been obvious to a person of ordinary skill in the art to combine Hoffberg et al. with Basham et al. for the benefit of identification of partially full tapes in a tape data storage apparatus to obtain the invention as specified in claim 1.

4. **With respect to claim 2**, Basham et al. disclose the apparatus of claim 1 (see above paragraph 3), wherein the selection module is further configured to allow the user to select a user-defined capacity that is substantially equivalent to the capacity of the first segment of the tape storage medium (column 11, lines 24-25).

5. **With respect to claim 3**, Basham et al. disclose the apparatus of claim 1 (see above paragraph 3), wherein the selection module is further configured to allow the user to select a user-defined capacity that is greater than the capacity of the first segment of the tape storage medium (a partition can be composed of multiple segments, column 11, lines 25-29).

6. **With respect to claim 4**, Basham et al. disclose the apparatus of claim 1 (see above paragraph 3), wherein the selection module is further configured to allow the user to select the user-defined capacity of the tape storage medium before the data has been stored on the tape storage medium (the tape is pre-formatted before data is written to it, column 8, lines 41-43; the partition size is selected by the user in the pre-formatting sequence, column 11, lines 18-20, lines 34-36).

7. **With respect to claim 5**, Basham et al. disclose the apparatus of claim 1 (see above paragraph 3), wherein the selection module is further configured to allow the user to select the user-defined capacity of the tape storage medium after the data has been stored on the tape storage medium (new segment sizes can be defined after data has

been written to tape, column 2, line 62 -- column 3, line 6; if the partitions are of a fixed size, this will alter the partition size, column 11, lines 25-28).

8. **With respect to claim 6**, Basham et al. disclose the apparatus of claim 1 (see above paragraph 3), further comprising a mapping module configured to associate the user-defined capacity with a tape storage device on which the tape storage medium is provided (column 9, lines 38-40; column 11, lines 20-23).

9. **With respect to claim 7**, Basham et al. disclose the apparatus of claim 1 (see above paragraph 3), further comprising a write module (internal to R/W controller 204 of Fig. 2) that is configured to write data to the tape storage medium within the user-defined capacity (the controller writes data, column 5, lines 55-56; the tape storage medium is partitioned based on user input, column 11, lines 18-20, lines 34-36).

10. **With respect to claim 9**, Basham et al. disclose a system for utilizing tape storage media segmentation to improve data access performance, the system comprising: a tape storage device (200 of Fig. 2; column 5, line 47) having a tape storage medium (tape medium 206 of Fig. 2; column 6, lines 1-11) that is configured to store data (column 5, lines 48-51; column 6, lines 1-11), the tape storage medium having

- a first segment (408a of Fig. 4; column 9, lines 1-3) and a second segment (data space following 409 of Fig. 4; column 9, lines 1-3);
- a host that is configured to communicate with the tape storage device (host 202 of Fig. 2; column 5, lines 51-54);

- a segmentation module (controller 204 of Fig. 2) configured to access a first segment and a second segment on the tape storage medium (the controller accesses the data on tape, column 5, lines 55-56; the data on the tape is stored in segments, column 9, lines 1-7); and
- a selection module (host 202 of Fig. 2; column 5, lines 51-54) configured to allow a user to select a user-defined capacity ("partition", column 11, lines 18-20, lines 34-36) of the tape storage medium that is less than a usable capacity of the tape storage medium (column 11, lines 34-36).
- a mapping module configured to associate the user-defined capacity of the tape storage medium with the tape storage device (column 9, lines 38-40; column 11, lines 20-23);
- a write module that is configured to write data to the tape storage medium within the user-defined capacity (column 9, lines 38-40; column 11, lines 20-23); and
- a read module that is configured to read data from the tape storage medium (column 9, lines 38-40; column 11, lines 20-23).

Basham et al. do not disclose the limitation wherein the tape storage medium has an identification module that is configured to identify a tape storage device as full when a substantial portion of the user-defined capacity of the storage medium is used to store the data.

However, Hoffberg et al. disclose the limitation wherein the tape storage medium has an identification module that is configured to identify a tape storage device as full when a substantial portion of the user-defined capacity of the storage medium is used to

store the data [1133, lines 8-11, where the library function acts as the identification module].

Basham et al. and Hoffberg et al. are analogous art because they are from the same field of endeavor, namely magnetic tape data storage.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to combine the partially full tape identification of Hoffberg et al. with the tape data storage apparatus of Basham et al. The motivation for doing so would have been because identification allows users "to optimally fill a tape without splitting a program" [1133, lines 3-4].

Therefore, it would have been obvious to a person of ordinary skill in the art to combine Hoffberg et al. with Basham et al. for the benefit of identification of partially full tapes in a tape data storage apparatus to obtain the invention as specified in claim 9.

11. **With respect to claim 10**, Basham et al. in view of Cadden et al. disclose the system of claim 9 (see above paragraph 10). Basham et al. further discloses the limitation wherein the segmentation module is further configured to use the tape storage medium according to a segmentation layout (column 9, lines 29-40).

12. **With respect to claim 11**, Basham et al. in view of Cadden et al. disclose the system of claim 10 (see above paragraph 11). Basham et al. further discloses the limitation wherein the segmentation layout defines a plurality of segments on the tape storage medium (column 9, lines 29-40), each segment having a user-defined size (column 10, lines 23-27).

13. **With respect to claim 12**, Basham et al. disclose a process for utilizing tape storage media segmentation to improve data access performance, the process comprising:

- providing a tape storage device (200 of Fig. 2; column 5, line 47) having a tape storage medium (tape medium 206 of Fig. 2; column 6, lines 1-11);
- accessing at least one of a first segment (408a of Fig. 4; column 9, lines 1-3) and a second segment (data space following 409 of Fig. 4; column 9, lines 1-3) on the tape storage medium (the controller accesses the data on tape, column 5, lines 55-56; the data on the tape is stored in segments, column 9, lines 1-7); and
- allowing a user to select a user-defined capacity ("partition", column 11, lines 18-20, lines 34-36) of the tape storage medium that is less than a usable capacity of the tape storage medium (column 11, lines 34-36).

Basham et al. do not disclose the limitation further comprising identifying a tape storage device as full when a substantial portion of the user-defined capacity of the tape storage medium is used to store the data.

However, Hoffberg et al. disclose the limitation further comprising identifying a tape storage device as full when a substantial portion of the user-defined capacity of the tape storage medium is used to store the data [1133, lines 8-11, where the library function acts as the identification module].

Basham et al. and Hoffberg et al. are analogous art because they are from the same field of endeavor, namely magnetic tape data storage.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to combine the partially full tape identification of Hoffberg et al. with the tape data storage apparatus of Basham et al. The motivation for doing so would have been because identification allows users "to optimally fill a tape without splitting a program" [1133, lines 3-4].

Therefore, it would have been obvious to a person of ordinary skill in the art to combine Hoffberg et al. with Basham et al. for the benefit of identification of partially full tapes in a tape data storage apparatus to obtain the invention as specified in claim 12.

14. **With respect to claim 13**, Basham et al. disclose the process of claim 12 (see above paragraph 10), wherein allowing a user to select a user-defined capacity further comprises allowing the user to select a user-defined capacity that is substantially equivalent to the capacity of the first segment of the tape storage medium (column 11, lines 24-25).

15. **With respect to claim 14**, Basham et al. disclose the process of claim 12 (see above paragraph 10), wherein allowing a user to select a user-defined capacity further comprises allowing the user to select a user-defined capacity that is greater than the capacity of the first segment of the tape storage medium (a partition can be composed of multiple segments, column 11, lines 25-29).

16. **With respect to claim 15**, Basham et al. disclose the process of claim 12 (see above paragraph 10), wherein allowing a user to select a user-defined capacity further comprises allowing the user to select the user-defined capacity of the tape storage medium before the data has been stored on the tape storage medium (the tape is pre-

formatted before data is written to it, column 8, lines 41-43; the partition size is selected by the user in the pre-formatting sequence, column 11, lines 18-20, lines 34-36).

17. **With respect to claim 16**, Basham et al. disclose the process of claim 12 (see above paragraph 10), wherein allowing a user to select a user-defined capacity further comprises allowing the user to select the user-defined capacity of the tape storage medium after the data has been stored on the tape storage medium (new segment sizes can be defined after data has been written to tape, column 2, line 62 -- column 3, line 6; if the partitions are of a fixed size, this will alter the partition size, column 11, lines 25-28).

18. **With respect to claim 17**, Basham et al. disclose the process of claim 12 (see above paragraph 10), further comprising associating the user-defined capacity of the tape storage medium with the tape storage device (column 9, lines 38-40; column 11, lines 20-23).

19. **With respect to claim 18**, Basham et al. disclose the process of claim 12 (see above paragraph 10), further comprising writing data to the tape storage medium within the user-defined capacity (the controller writes data, column 5, lines 55-56; the tape storage medium is partitioned based on user input, column 11, lines 18-20, lines 34-36).

20. **With respect to claim 20**, Basham et al. disclose a computer readable storage medium comprising computer readable code (column 10, lines 12-16) configured to carry out the process for utilizing tape storage media segmentation to improve data access performance of claim 12 (see above paragraph 10).

21. **With respect to claim 21**, Basham et al. disclose the apparatus of claim 1 (see above paragraph 3), wherein the first segment and the second segment are configured with different storage capacities (column 11, lines 25-31).

22. **With respect to claim 22**, Basham et al. disclose the apparatus of claim 1 (see above paragraph 3), wherein the segmentation module is further configured to divide the tape storage medium into the first segment and the second segment (column 10, lines 18-23), wherein the capacity of the first segment is substantially equivalent to the user-defined capacity (column 10, lines 23-27).

Response to Arguments

23. Applicant's arguments filed June 22, 2006, with respect to the rejections of claims 8, 9 and 19 under *35 USC § 102* have been fully considered and are persuasive. Therefore, the rejections have been withdrawn. However, upon further consideration, a new ground of rejection is made in view of Hoffberg et al. (US 2002/0151992) as above.

Conclusion

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Golden whose telephone number is 571-272-5628. The examiner can normally be reached on Monday-Friday, 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on 571-272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James R. Golden
Patent Examiner
Art Unit 2187

September 7, 2006

DONALD SPARKS
SUPERVISORY PATENT EXAMINER